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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------------|------------------|
| 09/762,497 | 04/20/2001 | Shojiro Kawakami | FUK-81 | 4970 |
| 22855 | 7590 | 05/06/2004 | | |
| RANDALL J. KNUTH P.C. 3510-A STELLHORN ROAD FORT WAYNE, IN 46815-4631 | | | EXAMINER CURTIS, CRAIG | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2872 | |

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 09/762,497 | Applicant(s) KAWAKAMI ET AL. | |
| | Examiner Craig Curtis | Art Unit 2872 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 21 January 2004.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-7 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-7 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

 a) ☒ All b) ☐ Some * c) ☐ None of:

 1. ☒ Certified copies of the priority documents have been received.

 2. ☐ Certified copies of the priority documents have been received in Application No. _____.

 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6) <input type="checkbox"/> Other: _____ |
|---|--|

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DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. **Claims 3, 4, and 7 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure that is not enabling.** More specifically, the recitation "...said laminating performed by a film-forming method at least partly including a step of dry etching said first refractive medium layer and said second refractive medium layer..." which is critical or essential to the practice of the invention and included in the claim(s), is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The precise manner in which said dry etching is performed in said film-forming method must be set out unambiguously in the claims.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 1, 2, 5, and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.**

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With regard to claim 1 in particular (and, of course, to claims 2, 5, and 6, in view of their dependency therefrom), the meaning of the recitation "...being configured for acting against the light (read: ~~the~~ light) such that the light thereby has a component whose angular incidence direction is not zero from the z-axis in the three-dimensional orthogonal coordinates (x,y,z) (read: from the z-axis in the three-dimensional orthogonal coordinates system (x,y,z))..." cannot be ascertained as same is presently drafted. With regard to the "...light thereby has a component whose angular incidence direction is not zero from the z-axis..." recitation, it is respectfully suggested that Applicants consider reciting simply that said light is incident non-normally (i.e., not perpendicularly) *with respect to* (as opposed to the presently recited from) the z-axis. Moreover, Applicants' recitation that the "...light has *a* component whose angular incidence direction is not zero...(emphasis added)" is not sufficiently definite. If by so reciting this limitation Applicants intended to convey that the light so "acted against" (a phrase which itself represents non-standard terminology in the polarization art—please consider amending this to read, for the sake of example, as "...being configured to polarize light...") has a well-defined polarization orientation with respect to the z-axis of said polarizer, Applicants are respectfully requested to amend the claims such that this is set out in a definite manner.

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Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 5, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Weber (U.S. Pat. No. 5,559,634).

With regard to claim 1, Weber discloses (see Fig. 1) the invention as claimed, a polarizer and, based on the structural teachings contained therein, method steps for producing a polarizer comprising:

a multilayered structure along z-axis consisting of two or more transparent bodies which have different refractive indices relative to one another (Fig. 2: 20 & 22: see col. 4, ll. 19-29) ;

each said layer having a shape (see Fig. 2), each said layer being a unit of lamination (id.), the shape of each said layer being in the form of an undulated structure (id.), said undulated structure consisting of a set of co-directed undulations, said undulated structure being a regularly undulated structure,

the lamination along the z-axis repeating the shape and being configured for acting against light such that the light thereby has a component (namely the S-polarized component depicted in Fig.

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2) whose angular incidence direction is not zero from the z-axis in the three-dimensional orthogonal coordinates (x,y,z) associated with the polarizer (id.).

With regard to claim 2, Weber further teaches wherein said polarizer has a first refractive medium layer containing at least one of Si and TiO₂ (viz, TiO₂; see col. 4, ll. 19-29) as a main component and a second refractive medium layer containing SiO₂ as a main component (id.).

With regard to claim 5, Weber further teaches wherein the shape of layers at least one of (read: *wherein at least one of said layers has a shape that is*) has a regularly undulated structure along the x-axis and is uniform along a y-axis. See Fig. 2.

With regard to claim 6, please see col. 4, ll. 19-29 (viz., SiO₂ (n=1.45) & TiO₂ (n=2-2.5)).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 4, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weber (U.S. Pat. No. 5,559,634) in view of FUJI (JP-0145124).

With regard to claims 3 & 4, Weber discloses the invention as set forth above **EXCEPT FOR** an explicit teaching wherein said performed film-forming method at least partly includes a step of dry etching said first refractive medium layer and said second refractive medium layer. FUJI, however,

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discloses (see ABSTRACT) the dry etching of a film using a dielectric coating and a photoresist. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the invention of Weber such that said film-forming method further at least partly include a dry etching of said first refractive medium layer and said second refractive medium layer, as motivated by FUJI, for at least the purpose of optimizing the uniformity in thickness of the layers resulting thereby.

With regard to claim 7, please see Fig. 2 in Weber, it being noted that the adjective *long* can reasonably be considered as a relative descriptor.

Response to Arguments

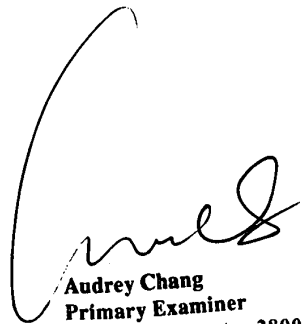
5. Applicants' arguments with respect to the claims 1-7, filed on 23 January 2004, have been considered but are moot in view of the new ground(s) of rejection.

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Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig Curtis, whose telephone number is (571) 272-2311. The centralized facsimile phone number for Art Unit 2872 is (703) 872-9306.

Any inquiry of a general nature regarding the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-0956.



Audrey Chang
Primary Examiner
Technology Center 2800

C.H.C.
Craig H. Curtis
Group Art Unit 2872
28 April 2004